NICKEL ALLOY 901

Nickel Alloy 901 (AMS 5660, AMS 5661, BS HR55) is a nickel-based alloy offering high strength and outstanding resistance to corrosion and oxidation at extreme temperatures. Primarily composed of nickel, along with substantial amounts of chromium and smaller additions of iron and silicon, this alloy is exceptionally versatile for demanding industrial applications.

Its standout quality is retaining high strength and stability in temperatures up to 600°C. This allows Nickel Alloy 901 to withstand incredibly hot and arduous environments that would cause most other metals to fail or rapidly degrade. Components made from this alloy maintain their integrity despite continuous exposure to hot gases, combustion products or thermal cycling.

This capability stems from the carefully balanced composition of Nickel Alloy 901. The high nickel content coupled with generous chromium provides a protective chromium oxide layer on the metal's surface when heated, shielding it from oxidation damage. The addition of silicon enhances this protective effect and the iron helps fine-tune the physical properties of the alloy. Combined, these elements allow Nickel Alloy 901 products to continuously perform in the hottest sections of industrial plants, power generation equipment and vehicle engines.

Potential applications that could benefit from Nickel Alloy 901's thermal and corrosion resistance include furnace components, parts for aircraft and land-based gas turbines, rocket engine nozzles, nuclear power systems, heat exchangers and any component facing extremely high heat.

Specific Gravity

8.14 g/cm3

Typical Applications	Related Specifications
Aircraft	AMS 5660
Rocket Engines	AMS 5661
Gas Turbine Components	BS HR55
Furnace Components	US NO9901

Chemical Composition (Wt %)

	Ni	Cr	Si	S	Co	FE	Al	C	Mn	Mo	Ti	Cu
Min	40	11	-	-	-	Bal	-	-	-	5	2.8	-
Max	45	14	0.4	0.03	1		0.35	0.1	0.5	6.5	3.1	0.5

Typical Mechanical Properties
(in the solution treated condition)

0.2% Proof Stress	Tensile Strength	Elongation	Reduction
MPA	MPA	%	%
862	1207	15	19

What is Alloy 901?

Alloy 901 is a nickel-based alloy, that offers high strength and resistance to corrosion and oxidation at high temperatures. Typical applications are Aircraft parts, rocket engines, gas turbine components and furnace components.

What is the composition of Alloy 901?

Alloy 901 is mainly nickel, iron and chromium, which also contains Titanium and Aluminium for precipitation hardening and molybdenum for strength.

What are the typical uses for Alloy 901?

Typical uses include Aircraft parts, Rocket Engines, Gas Turbine Components, Furnace Components. Alloy 901 is mainly used for components facing extremely high heat.

General Enquiries

T: +44 (0) 1525 217 556 (tel:+4401525217556)
E: sales@dynamicmetalsltd.com (mailto:sales@dynamicmetalsltd.com)

UK Address:

Head Office

40 Eden Way
Chartwell Business Park
Leighton Buzzard
Bedfordshire
LU7 4FY

T: +44 (0)1525 217 556 (tel:+441525217556)

Conversion Centre

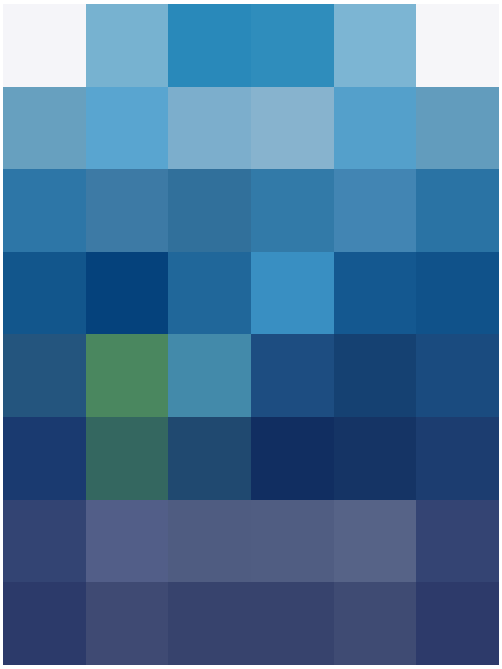
Suite 2 Meadowhall Riverside
Meadowhall Road
Sheffield
South Yorkshire
S9 1BW

T: +44 (0)1143 030 320 (tel:+4401143030320)

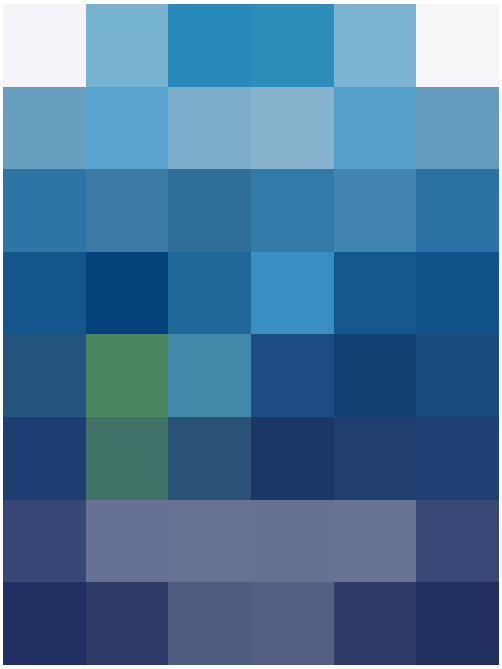
Registered Office (only)

The Granary
Crowhill Farm Ravensden Road
Wilden
Bedfordshire
MK44 2QS

T: +44 (0)1525 217 556 (tel:+441525217556)



(/media/zn2dbklo/cyber-essentials-certified-plus.png)



(/media/dyelbliq/cyber-essentials-certified.png)